

Commodity Spotlight



National Watermelon Promotion Board

Melons: Food for the Angels?

Mark Twain wrote of watermelon in 1894: “When one has tasted it, he knows what the angels eat.” Americans appear to agree with this assessment, as per capita use of watermelon and other melons continues to trend higher in the 1990’s.

Melons are consumed frequently as desserts, snacks, fruit salads, breakfast foods, picnic foods, edible plate garnishes, and in drinks, and are used in many other creative ways (e.g., watermelon salsa). Up until two decades ago, melons were largely seasonal delights that appeared in the market for a few months and then disappeared as late-summer and fall fruit crops were harvested. Today, imports during the winter and early spring help satisfy consumer demand for year-round supplies of melons. In 1997, U.S. consumption of melons reached 8.2 billion pounds—double the 1980 level.

At the grower/shipper level, the domestic melon crop was valued at \$836 million in 1997, with cantaloupe accounting for half of the total. The annual retail value of all melons, including imports, likely averages \$3 billion-\$4 billion.

Melon crops common in the U.S. are of the *Cucurbitaceae* (gourd) botanical family—the family that includes cucumbers, squash, and pumpkins. Cantaloupes

are reportedly purchased more often than any other melon. By weight, however, watermelon is the most-consumed melon in the U.S., followed by cantaloupe and honeydew. In addition, several specialty varieties are commonly found in supermarkets, including crenshaw, casaba, Santa Claus (also called Christmas melon), and Persian melons.

What is referred to as cantaloupe in the U.S. is actually muskmelon. True

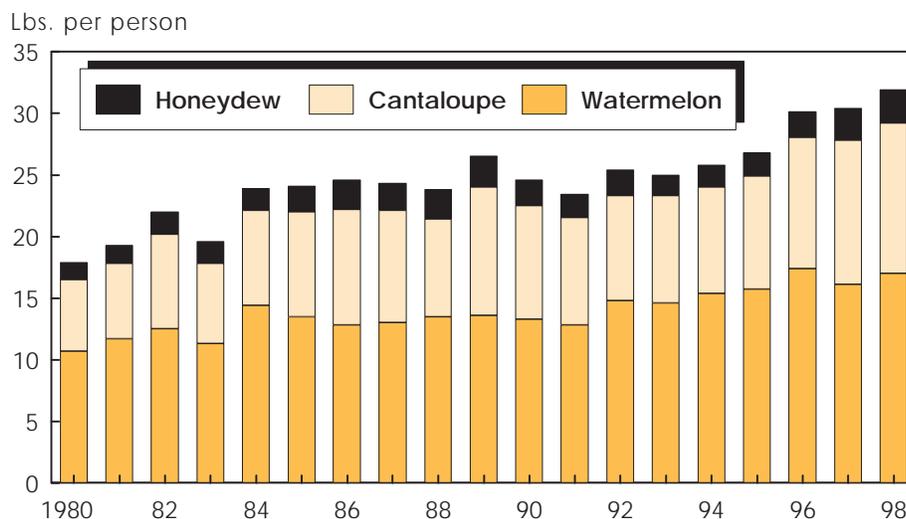
cantaloupes, common in Europe, lack the characteristic netted rind of the muskmelon and are not grown commercially in the U.S. Within the melon family, muskmelons are part of a group that also includes honeydew, crenshaw, casaba, and Persian melons.

U.S. Melon Use Highest Since Mid-1940’s

Since 1990, per capita melon use has increased 24 percent to 30.4 pounds—the highest since the mid-1940’s, a time when fewer substitutes (e.g., processed snacks and desserts) were available. Consumers have increased use of each of the three major melons, with cantaloupe rising the most. Per capita use of cantaloupe has risen 27 percent since 1990. Cantaloupe, in fact, has been gaining popularity for many years. Consumption of this popular breakfast and dessert melon has doubled since 1980 to 11.7 pounds per capita and is expected to rise again this year.

Watermelons, the largest of all melons, account for slightly over half of U.S. melon consumption. In 1996, watermelon use reached 17.4 pounds per person (the highest since 1958) before falling to 16.1 pounds with a weather-shortened crop in 1997. Despite the short-lived temporary decline in 1997, watermelon use is up 50 percent since 1980. Americans consumed 2.6 pounds of honeydew melons in 1997,

U.S. Per Capita Melon Consumption Has Nearly Doubled Since 1980



1998 forecast.
Economic Research Service, USDA

up from 2.1 pounds in 1990 and 1.4 pounds in 1980.

Melon consumption has been increasing for a number of reasons that include:

- emergence of year-round demand and availability,
- increasing health consciousness among consumers,
- strong economic growth,
- more creative marketing, and
- adoption of improved varieties.

Over the past two decades, as incomes have risen and consumers have become more health-conscious, the demand for fresh fruits and vegetables has increased. As consumers slowly integrated more produce into their diets, demand has risen for year-round supplies of seasonal produce such as melons. The demand has been met during the winter and early spring by increased imports. It is now common to find a variety of melons in supermarkets and at salad bars throughout the year. Nearly half of the increase in U.S. melon consumption since 1994 is accounted for by rising imports.

The economic expansion during the 1990's has also boosted melon consumption, with increased incomes allowing consumers to spend more on meals away from home. The continued prevalence of salad and breakfast bars during the 1990's has familiarized consumers with convenient pre-cut melons. Industry surveys of produce consumers also suggest that consumers with higher incomes tend to purchase a wider variety of produce. This may favor increased consumption of specialty melons like crenshaw and casaba during economic expansions.

In the 1990's, several concepts have gained favor in retail produce marketing. These include pre-cut product displays and instore salad bars. In the case of melons, this type of marketing tends to appeal most to small households that might not otherwise purchase whole melons. Also, increased consumer information in the produce department (nutritional information, recipe tips, point-of-purchase advertising, and colorful displays) may be influencing purchases.

Strong promotional efforts by industry groups like the National Watermelon Promotion Board and the Produce for Better Health Foundation—which runs the national 5-A-Day for Better Health program in cooperation with the National Cancer Institute—have likely helped educate children and adults on the nutritional merits of vegetables and fruits, including melons. Melons are excellent sources of vitamin C. In addition, cantaloupe (and watermelon to a lesser extent) is a good source of beta-carotene and also contains potassium, iron, and some fiber. Although honeydew and casaba melons contain less vitamin C than cantaloupe, they are still excellent sources, and also provide potassium, iron, and dietary fiber. Watermelon contains small amounts of lycopene, a color compound found in heavy concentrations in tomatoes and thought to be a deterrent to some forms of cancer.

Finally, the industry has improved the products offered to consumers through better harvesting and handling (ensuring more consistent melon quality) and the introduction of new hybrid varieties (better flavor). For example, cantaloupe producers are continuing to adopt new varieties that provide consistently high sugar content (called soluble solids). Cantaloupe growers have also increased quality by switching from shed packing to placing fruit directly into shipping boxes in the field, which reduces handling and scuffing. Melons are also now moved quickly from the field to cooling rooms prior to shipping to maintain maximum quality and shelf life.

For watermelon, improvements in quality and availability of seedless and smaller icebox varieties have helped spur demand. The popularity of seedless watermelon has been on the rise over the past decade. According to industry sources, seedless watermelon is more popular in the West (particularly California), with seeded watermelon heavily favored in the South. Most other regions favor seeded varieties slightly more than seedless. Production of seedless watermelons requires that about a third of the area in a field be planted to seeded varieties, which act as pollinators for the sterile seedless varieties. Proponents of seeded varieties can thus rest assured that seeded watermelons will always be available.

Is It Ripe?

Melons have drawn the ire of consumers in the past because of perceptions of poor quality. Undoubtedly some of these perceptions were related to the presence of immature melons in the store. Consumers can lessen the chance of taking home a melon that tastes like a cucumber by following a few simple rules.

For watermelon, the industry suggests consumers choose a melon that is symmetrical and free of bruises, cuts, and dents. The melon should be heavy for its size, and the rind should have a healthy sheen. The key test is to turn the melon over and check the color of the underside (where the melon was touching the ground). The underside of a ripe watermelon should be pale or creamy yellow.

A good-quality cantaloupe will be free of defects and will be firm except around the stem end, which should be a bit softer and have some give. The keys to ripeness can be found on the stem end. When cantaloupes are ripe in the field, they “slip” from the vine when pulled at harvest, leaving a fairly smooth stem end. A melon at room temperature should have the characteristic sweet melon smell at the stem end.

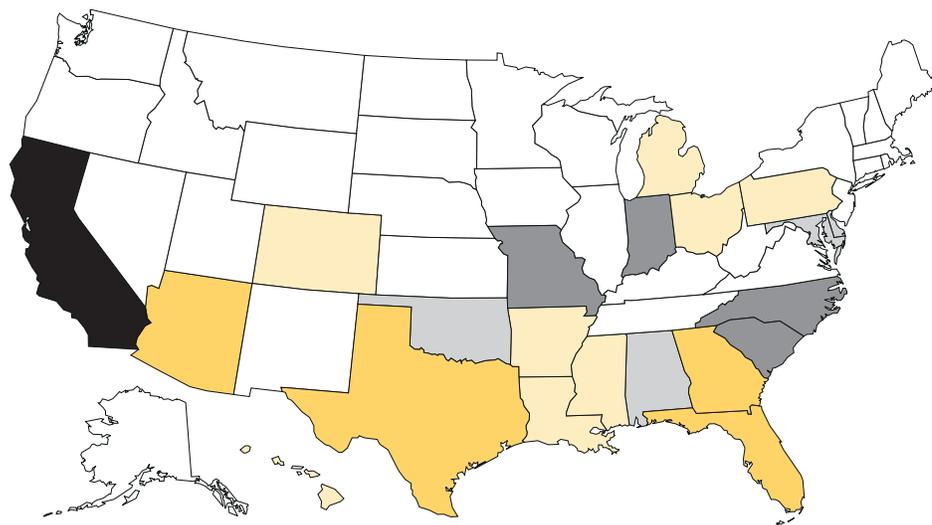
Determining the ripeness of a honeydew melon is a bit more difficult since the clues are harder to spot. A ripe honeydew melon should have a rind that is fairly firm (not hard), is free of defects, has a waxy feel, and is a creamy yellow color. The stem end should have some give and should emit a sweet melon aroma.

Southern Climate Favors Melon Production

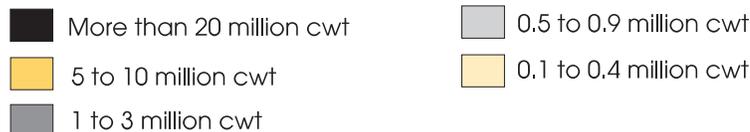
Requiring a long, frost-free growing season for optimal yields, melons are grown principally in the southern half of the Nation. California, Texas, and Arizona are the only States that commercially produce all three major melon varieties. The top five States account for 84 percent of U.S. melon production.

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Melon Production Is Concentrated in the Southern U.S.



Annual output:



Economic Research Service, USDA

California, the leading melon producer with 35 percent of the crop, ships melons from May through November. California is the Nation's top producer of cantaloupes (60 percent of the crop during 1995-97) and honeydews (74 percent), and is the third leading producer of watermelons (17.6 percent). About 54 percent of California's melon crop consists of cantaloupes.

Texas, the second leading producer of melons, grows 15 percent of the crop. Texas ships melons largely during May-July, except for watermelons, which are shipped through December. Texas is third in cantaloupe and honeydew production and is the fourth leading producer of watermelons. Cantaloupe and honeydew production is concentrated in the lower Rio Grande Valley and the Trans Pecos region, while watermelon is grown in several areas of the State.

Georgia produces watermelon and some cantaloupe and accounts for 13 percent of the U.S. melon crop. With improved yields the past few years, Georgia has become the second leading producer of

watermelons (18.2 percent of the crop) and produces 5 percent of the Nation's cantaloupe. A majority of the melon acreage is concentrated in the south-central area of the State.

Florida produces 11 percent of the U.S. melon crop with most production in watermelons. While it is traditionally the Nation's leading producer of watermelon (18.3 percent of the crop), Florida's acreage in other melons is limited. The State's shipments peak in May and June. Output is spread over more than 30 counties, but southern counties account for about 40 percent of the crop.

Arizona completes the top five, producing 10 percent of the U.S. melon crop. Arizona is the second leading producer of

According to the National Watermelon Promotion Board, a recipe for watermelon rind pickles (a product still popular in the southern U.S.) was included in the first American cookbook published in 1796.

cantaloupes, with 22 percent of the crop. The State harvests a spring and a fall crop of both honeydews and cantaloupes; shipments run from May through November and volume peaks in early summer.

Imports Round Out Seasonal Availability

China is the leading producer of melons, accounting for 46 percent of the world total, followed by Turkey (9 percent) and Iran (5 percent). The U.S. is fourth, with close to 5 percent of output.

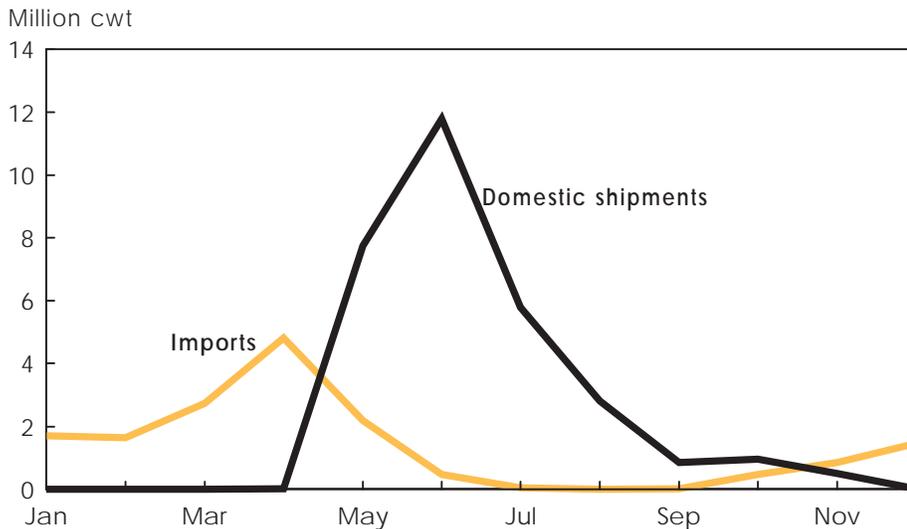
World per capita use of melons in 1996 was estimated at 24 pounds. Among the top 15 producing countries, Turkey has the highest per capita use at 223 pounds. Israel is second at 179 pounds, followed by Greece at 150 pounds. The U.S. is 41st.

Watermelon accounts for the largest portion of melon use in the world. Although most watermelon is prized in the U.S. for the sweet melon flesh, it has varied uses in other countries. Roasted watermelon seeds are popular in parts of Asia. Also in Asia, watermelon seeds are sometimes ground into a type of cereal product to make bread. In Russia, watermelon juice is fermented to make alcoholic drinks. In many areas of the developing world, melons of all types are routinely used as animal feed.

The bulk of world melon trade tends to be concentrated within regions, due largely to the cost of transportation (melons are bulky) and competition from local suppliers. The Food and Agriculture Organization of the United Nations reports that only 4 percent of world melon use comes from import sources. Imports of cantaloupe and other melons account for 7 percent of use while only 3 percent of world watermelon use originates from foreign sources. In 1996, world melon trade was valued at \$1 billion.

Imports complement U.S. domestic output to provide consumers with melons year-round. Average temperatures in most areas of the U.S. are too low for reliable production of melon crops during the winter and early spring months. From December to April, U.S. melon use depends almost entirely on imports. Imports accounted for 20 percent of

Imports Ensure Availability of Melons in Winter and Early Spring



Economic Research Service, USDA

year-round U.S. consumption in 1997, up from 14 percent in 1990 and 10 percent in 1980.

Proximity to low-cost producers in Mexico and Central America, combined with strengthening off-season domestic demand (winter/early spring), has made the U.S. the world's leading melon importer. A net importer of melons, the U.S. accounts for 25 percent of the world's melon import volume—15 percent of watermelon imports and 34 percent of global imports of cantaloupe and other melons. U.S. imports were valued at \$230 million in 1997, with cantaloupe accounting for the largest share at 58 percent.

Mexico provided 54 percent of the total volume of U.S. melon imports in 1997. Among the nations covered by the Caribbean Basin Initiative (CBI) are other major sources—Honduras (17 percent of the U.S. market), Guatemala (11 percent), and Costa Rica (11 percent). Under the CBI, signed into law in 1983, melons imported from member nations enter the U.S. duty-free.

Most melons from Mexico enter during the duty-free period set by NAFTA (mainly December-April), when U.S. production is largely nonexistent. However, some Mexican melons enter during the tariff-protected periods in late spring and sum-

mer. The high pre-NAFTA inseason tariffs for melons other than watermelon (as high as 35 percent ad valorem) are now being phased out over 15 years (until 2008). For watermelon imports, a declining tariff (20 percent at the start of NAFTA implementation) as well as a safeguard quota (not filled as yet in any year) are in effect during the main U.S. season (May 1-September 30).

From the early 1980's until 1994, Mexico had been steadily losing share of the U.S. cantaloupe and honeydew markets to CBI nations. However, during the past few years, Mexico's share of these markets has increased despite intense competition from several CBI nations. In 1993, Mexico claimed 47 percent of all U.S. melon imports, and by 1997 its share had risen to 54 percent.

The Mexican melon sector is hamstrung by low yields, while several Central American countries (especially Costa Rica) have benefited from foreign and domestic investment in modern production methods. Despite lower yields, Mexico has regained market share, largely because the 1995 peso devaluation and tariff reductions under NAFTA helped offset the cost advantage enjoyed by more efficient competitors.

While U.S. melon imports have risen 82 percent since 1990, exports have doubled, totaling \$80 million in 1997. Exports now absorb 5 percent of the U.S. melon supply—up from 4 percent in 1990. Canada accounts for 90 percent of U.S. melon exports, with Japan a distant second at 5 percent. Rising U.S. melon exports to Canada reflect the similarities in consumption trends between the two countries.

The potent combination of improved varieties, year-round availability, enterprising promotion, and nutritional savvy among consumers—both in the U.S. and Canada—favors continued expansion of melon demand into the new millennium.

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Upcoming Reports—USDA's Economic Research Service

The following reports will be issued electronically on dates and at times (ET) indicated.

August

- 13 *Cotton and Wool Outlook* (4 p.m.)**
- Feed Outlook* (4 p.m.)**
- Oil Crops Outlook* (4 p.m.)**
- Rice Outlook* (4 p.m.)**
- Wheat Outlook* (4 p.m.)**
- 17 *Livestock, Dairy, & Poultry* (3 p.m.)
- 20 *Agricultural Outlook**
- U.S. Agricultural Trade Update* (3 p.m.)
- 26 *Fruit and Tree Nuts**
- 28 *Agricultural Exports**

*Release of summary, 3 p.m.

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